

**REMARKS**

In response to the Office Action dated February 28, 2007, no claims are amended, no claims are canceled, and no claims are added. Claims 1-4 are now active in this application.

**The substance of the telephone interview** held on February 5, 2007 includes the following. Examiner Tawfik Goma and Applicant's Patent Attorney Ed Garcia-Otero discussed the prior art, and determined that Katayama U.S. Patent 6,282,164 merely disclosed outer areas in phase with each other. Thus, Katayama did not disclose outer areas being out of phase by 180 degrees as required by pending claims 1-4. The Examiner agreed to withdraw the final rejection dated December 1, 2007, and to issue a new Office Action.

**Claims 1 through 3 were rejected under 35 U.S.C. § 103(a)** as being unpatentable over U.S. patent 6,282,164 (Katayama) in view of U. S. patent 5,994,692 (Holzapfel). This rejection is traversed.

**Claim 4 was rejected under 35 U.S.C. § 103(a)** as being unpatentable over U.S. patent 6,282,164 (Katayama) in view of U. S. patent 6,594,210 (Komagi et al.). This rejection is traversed.

Independent claims 1 and 3 both recite, in pertinent part, "a beam separation means which separates a laser beam emitted by the laser light source into at least three beams" and "the first area is placed between the second and third areas, and the second area has periodic structure that is shifted from that of the first area by approximately 90 degrees in the phase of the periodic structure, and the third area has periodic structure that is shifted from that of the second area by approximately 180 degrees in the phase of the periodic structure."

In order to establish a *prima facie* obviousness under 35 U.S.C. § 103(a), all the claim limitations must be taught or suggested by the prior art. *In re Rokya*, 490 F. 2d 981, 180 USPQ

580 (CCPA 1974). Further, “rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F. 3d 977, 988 (CA Fed. 2006).

The Office Action acknowledges that Kayayama fails to disclose the recited phase relationships of claims 1 and 3. The Office Action, at page 3, asserts that Holzapfel, at FIG. 5, discloses a beam separation means with first through third areas such that the first area is +90 degrees out of phase with the middle (second) area, and the third area is -90 degrees out of phase with the middle (second) area.

However, Holzapfel, at column 6, lines 15-26, merely states, “FIG. 5 is a front view of a scanning grating according to a third preferred embodiment of the present invention. The scanning grating 20 is suitable for reducing the harmonic wave content of the scanning signals. The scanning grating 20 again consists of a grating with a graduation period TA in the measuring direction X having four transverse grating areas 21 to 24. The markings or grating strips of the transverse grating areas 21 to 24 are arranged phase-shifted with respect to each other in such a way that the phase positions of 0°, 90°, 0°, and -90° result. The optimal scanning distance Z1 is equal to  $(n+3/4)TA^2/\lambda$  in this case.” Thus, the 90°, 0°, and -90° portion of Holzapfel is merely a subset of a larger 0°, 90°, 0°, and -90° repeating unit, and does not separate the incident laser light source into at least three beams.

**Holzapfel is non-analogous art.** To rely upon a reference under 35 U.S.C. 103, the reference must be analogous prior art. Specifically, “[i]n order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the

inventor was concerned." *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). See also *In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986); *In re Clay*, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992) See also MPEP § 2141.01(a).

The Office Action opines that Holzapfel is in "the same field of endeavor," apparently the same field of endeavor as Katayama. However, Holzapfel is directed to a positioning measuring system wherein the light from a light source is modulated as a function of the position of several gratings. Specifically, the incident light source of Holzapfel is split into two beams, see FIG. 2 and column 4, lines 11-13. In contrast to Holzapfel, Katayama splits a light beam source into three beams, see FIG. 10b. Thus, Holzapfel is non-analogous art with respect to Katayama.

**There is no suggestion or motivation to combine** the teachings of Holzapfel and Katayama. The Office Action, at page 3, merely asserts that one of ordinary skill in the art "would have been motivated to provide the structure in order to reduce the harmonic wave content of the scanning signals," referencing Holzapfel column 6, lines 14-19. However, "rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F. 3d 977, 988 (CA Fed. 2006).

As discussed above, the diffraction grating of Hozapfel splits the incident light into two beams. In contrast to Hozapfel, Katayama splits the incident light into three beams. Specifically, Katayama illustrates three beams at FIG. 5(b). Katayama also states, at column 5, lines 30-37, that, "[i]t is therefore an object . . . to provide an optical head apparatus . . . capable of detecting a land/groove position . . .". Thus, the object of Katayama is to make it possible to detect that the light spot is on a land or a groove position. To be able to achieve this object,

regions 18a and 18c shown in FIG. 7 must be in-phase or the same phase, according to column 10, lines 53-67, and column 11, line 55 to column 13 line 65.

The tracking signal of Katayama produced from the sub spots includes only a DC signal which is the so-called offset component that is associated with the displacement of the objective lens, while the AC signal component or so-called push-pull signal is removed. See column 11, line 55 to column 13, line 65 of Katayama.

In contrast to Katayama, the tracking signal of the present invention obtained from the sub spots includes an AC signal (i.e., a push-pull signal obtained from the sub spots) which is out of phase by about 180 degrees relative to the AC signal component included in the tracking signal produced from the main spot, thereby resulting in an excellent tracking signal which is a special and unique advantage over the cited art.

Thus, Applicant submits that independent claims 1 and 3 are patentable over the cited art.

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as independent claim 1 is patentable for the reasons set forth above, it is respectfully submitted that all claims dependent thereon are also patentable.

Thus, it is respectfully submitted that dependent claim 2 is also patentable, for at least the same reasons as independent claim 1.

Independent claim 4 recites, in pertinent part, "an amplification factor control means which changes the amplification factor K depending on the interval between the guide grooves of the optical information record medium."

In order to establish a *prima facie* obviousness under 35 U.S.C. § 103(a), all the claim limitations must be taught or suggested by the prior art. *In re Rokya*, 490 F. 2d 981, 180 USPQ 580 (CCPA 1974).

The Office Action, at page 5, admits that Katayama fails to disclose the above recited limitation of claim 4, and asserts that Kugami discloses adjusting a gain factor depending on the interval between the guide grooves of the optical information medium at column 16, lines 29-45. However, Kugami, at column 16, lines 29-45, merely states, "By employing a configuration in which the gain of the gain adjusting circuit is set in advance in accordance with the track pitch of a disc recording medium and in which the quantities of phase changes in the phase shift circuits can be varied in accordance with the reproduction speed of the disc recording medium, the invention can be applied to various disc drive apparatuses." Thus, Kugami does not disclose changing the amplification factor K depending on the interval between the guide grooves of the optical information record medium as recited by independent claim 4.

Hence, neither cited reference discloses the changing of the amplification factor as recited in claim 4, and the combination of Katayama and Kugami does not meet all the requirements of claim 4.

Thus, Applicant respectfully submits that claim 4 is patentable over the applied art.

Accordingly, it is urged that the application, as now amended, is in condition for allowance, an indication of which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, Examiner is requested to call Applicants' attorney at the telephone number shown below.

**Application No.: 10/687,910**

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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